FROM THE EDITOR'S DESK

SEPTEMBER, and I hope our membership (number-wise) has "bottomed-out." The number of newsletters printed the last few months has remained constant (as has the much lower cost - courtesy of SIR SPEEDY in Morristown - and at no sacrifice in quality!).

in the KUDOs department...Sam Cory wants to pass on something that we all share in. "THANKS" to the 'OL HACKERS group, who have shared their entire PD library with us! Hopefully continued cooperation between neighboring (and neighborly) ATARI clubs will help fill the continuing void left by what I see as ATARI Corp's total lack of both product and user group support.

It has been suggested and accepted that both 8 and 16-Bit sessions (forum, laboratory, Q/A, introductory, whatever) be held prior to the question and answer period (9:45 am). I support that, and will make myself available starting at the October meeting from 9:30 to 9:45 to address any 8-bit items, problems, questions, etc., that anyone may have. I might not have a ready answer for everything...but hopefully I'll be able to get one!

...'til next month...

IN THIS ISSUE ...

CALENDAR OF EVENTS

SEPT 23, 1988	Executive Board Meeting
OCT. 1-2, 1988	Washington, DC Atarifest
Oct. 8, 1988	JACG Monthly Meeting: Officer Nominations
Nov. 12, 1988	JACG Monthly Meeting: Election of Officers

PRESIDENT'S REPORT
by Linda Peckham

September: the month of fall, returning to school, and in this leap year, the beginning of the serious presidential campaigns. Shortly after we go to the polls to vote in the national elections, it will be time to vote for the 1989 JACG officers -- and it is not too soon to begin thinking about who should be leading the club next year. Nominations are made during the October meeting, and the voting is done in November. Circle those calenders! If you care about this club, October and November are perhaps the two most important months of the year. And if you 6 really care about the JACG, if you care about the future of this club, then perhaps it is time to volunteer to serve.

What does it take, to be an officer of a computer club? It takes time -- time to attend the executive board meetings. Time to answer phone calls. Time to attend all of the monthly meetings, write articles, and fill the specific requirements of the office. It needs a certain amount of ability to get along with other people -- the other officers, and the members. It takes enthusiasm, and it takes committment. I don't wish to scare anyone off -- the payoffs of the job (increased contact with other computer enthusiasts, experience in public speaking, experience in being a leader, and part of a decision-making committee) are worth the demands. But you should realize what you might be letting yourself in for.

We will have five offices up for election in November. Very briefly, (I will try to have an expanded job description in the October newsletter), these are the offices, and their main responsibilities.

President -- Chairs the monthly meetings, and the executive board meetings. Also responsible for the programs (demonstrations).

Vice-Presidents (16-bit, 8-bit) -- Either vice-president may chair the meetings if the President is absent. Each person is responsible for deciding upon a disk-of-the-month, and demonstrating it at the meeting.

Secretary & Membership -- This person keeps the membership list of the club, and handles the newsletter exchange with other computer clubs.

Treasurer -- Handles the money of the club. Sources of club money are memberships and disks, expenses are the newsletters, disks, and the bulletin board system.

Other offices listed under the executive board are by appointment. Sam Cory and Dave Noyes intend to continue their respective offices -- for which we should all give them a hearty round of applause. One office, at this

NOISE FROM NOYES
by Dave Noyes

The latest additions to the Noyes hardware inventory:
1) The PRINTER ENHANCER from Xetec.
2) The STAR NX-1000 printer from Star.
3) The HS-80 Letter Jet printer from EPSON.
4) The 1 Meg MIO from ICD.

The PRINTER ENHANCER provides three enhancements:
 1) 64K buffering of output to the printer.
 2) Eight (8) built in internal NLQ fonts.
 3) Electronic A/B switch to channel output to two printers (cables included).
There is also additional capability to control the ENHANCER from software commands, or by front panel buttons. A transparent mode allows MOST software commands to be sent directly to the printer, bypassing the ENHANCER. This is not a perfect world, however...to use DAISY DOT II, I have to disconnect the ENHANCER. Basically however, the ENHANCER does the job well, and will make your dot-matrix printer into an NLQ printer...with a buffer added in. Considering buffer, NLQ fonts, and the A/B switch...the $179.00 was well spent (I keep telling my wife!).

The Star NX-1000 was purchased to replace my PANASONIC KXP-1090 printer (which has done yoeman service...and continues to so so on a seperate basis as a word processor with an ATARI 130XE - used by the rest of my family. The NX-1000 is replete with features:
 1) NLQ and draft fonts, and pitch control...all from the front panel.
 2) "Paper parking" - tractor feed paper need not be removed in order to use single sheets.
 3) Total EPSON "FX" compatability- including reverse line feeds.
 4) DIP switches accessible without dismantling of the printer!
 5) 4K buffer allows down-loadable fonts.
 6) Front panel lock to force transparency to software commands - if desired.
 7) Well-organized 104 page manual.
 8) Centronics connection is on the side (cord does not interfere with paper) - A nice touch!

At $199.00, a lot for the money (I keep telling my wife!).

The EPSON HS-80 is an interesting little printer (and I mean little [13" X 4 1/2" X 3"]; weighing peanuts [4.2 pounds]). It features:
 1) EPSON MX-compatability.
 2) Single sheet only.
 3) Ink jet (no ribbon).
 4) NLQ mode.

time, however, is open. We need someone to volunteer to take over Sales & Advertising. This person must work with our advertisers, both the continuing ones, and any occasional or new advertisers that the officer may be able to solicit. If a person has available time during the weekdays, which could be used to visit area stores, this would be a plus.

On a more fun note, let me remind everyone of the regional computer shows coming up in October. On October 1 and 2, the Washington, D.C. area clubs are holding the fourth annual Atarifest in Fairfax, Virginia. This show is worth going to, even if it does require a 4 to 5 hour drive. The D.C. area has a number of computer stores that offer Atari products, and most of them, along with software and hardware companies, show up to sell and display. Besides the gymnasium filled with dealers, the show includes a number of classrooms set up for individual demonstrations on such various aspects as telecommunations, education, Midi and Magic Sac. Speeches will also be given -- probably the most popular seminar last year was given by Dave Small (creater of the Macintosh emulator for the ST). I will report on the show at the club meeting the next week (and perhaps Jack Rutt will as well). But my report will tend to be biased towards the 16-bit events -- are there any 8-bitters going?

I also noticed that the Northeast Computer Faire is advertised in the September ANTIC. This is a big show held in Boston, the weekend of October 29. I've never been to one, and it is not Atari-specific. But it is still a show to consider going to.

Well, this seems to wrap it up for this month. I hope to see you all at the club meetings. Just remember -- a club is worth what you put into it. The Jersey Atari Computer Group can't survive without volunteers -- and I hope you're one of them!

5) Silence!
6) Portability - Works from a power supply, or internally from NI-CADS!
7) High-resolution dot-graphics.

At $199.99, as I keep telling my wife - a bargain.

The 1 Meg Multi I/O board from ICD does many things - most of them quite well:
1) Printer interface.
2) Modem interface.
3) 1 Meg printer spooler (buffer)
4) 1 Meg assemblage of RAM disks.
5) Ability to switch virtual drives among eight (including RAM disks.
6) Hard drive interface (maybe someday!).

The only problem is the same problem that I had with the 256K version - the spooler does "strange" things with some data-bas software (such as SYNFILE+). Other than that, the $299.00 was well spent - as I've told my wife on several occasions!.

As far as any additional hardware reviews. Jersey Central Power and Light has informed me that I'll need a thousand amp feed if I add anything at all to my current (get the pun?) set-up. Not withstanding that, the chief financier of the household has informed me that additional disbursements for computer equipment are highly unlikely!...

...'til next month...


HOT STUFF

Neil Van Oost Jr. - JACG

If you are into computer graphics, then I have a hot item for you. A few days ago I received my September '88 issue of A.N.A.L.O.G., and on page 18 was the start of an article by James J. Greco, titled "The Mandlebrot Set". What! You ask is "The Mandlebrot Set", well my first introduction to "TMS" (The Mandlebrot Set) was just over a year ago, when I received a disk of strange picture files. The were labeled, only, 'Created on a 520ST and converted to Micropainter'. They were really odd pictures, in four colors, depicting twisting columns and "black lakes". Scenes that looked out of this world.

They were created from a program, for the ST, that came out in the January 1986, A.N.A.L.O.G. Well, now thanks to Mr. Greco that same computing power that worked on 'Big Brother' is now a fact on my 8-bit 130XE.

TMS was described in the "Scientific American" by Mr.A. K. Dewdney. The Mandlebrot Set is a mathmatical way of creating some fasinating computer-generated graphics. It is based on the repeated squaring of complex numbers. Complex numbers are numbers that involve the square root of -1.

The program lets you create pictures of different sections of TMS in several different graphics formats, from very low resolution to high resolution. Pictures look best when created in high or medium resolution. High resolution is graphics 15 and very low resolution is graphics 3, as far as I can figure out. High resolution gives the best detail and medium resolution gives the best color. Pictures take any where from 15 minutes to in excess of 24 hours to complete. This is dependent on several factors which become apperent after playing with the program.

The only thing more that I could wish for, is a way to convert these pictures to Micropainter or Microillustrator formats, and I'm working on that.

➤
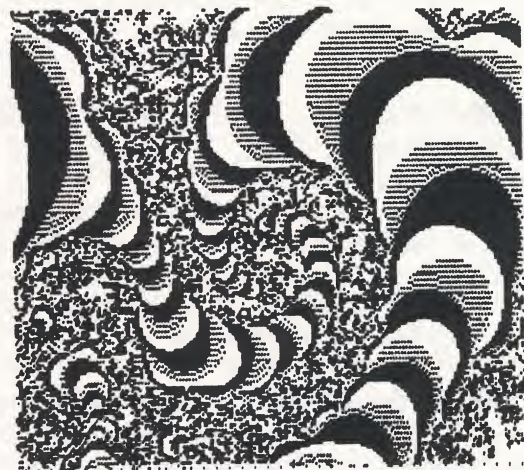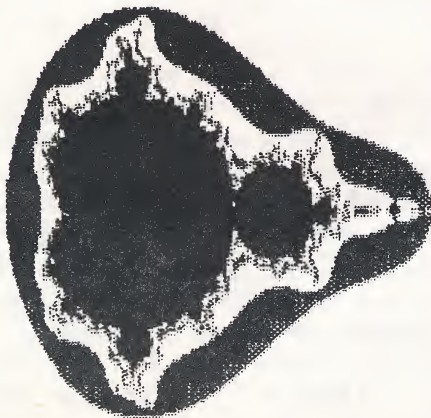
EXECUTIVE MEETING MINUTES
R. P. MULHEARN - J.A.C.G. SECRETARY

THE MEETING WAS CALLED TO ORDER BY THE PRESIDENT WITH DOUG van HOOK, LINDA PECKHAM, JOHN DEAN, JACK RUTT, SAM CORY AND BOB MULHEARN PRESENT AND CONSTITUTING A QUORUM.

DOUG STATED THAT THE DEMOS FOR THE AUGUST MEETING WERE ALL SET, BUT THAT FUTURE MEETINGS MUST BE MONITORED CLOSELY. HE NEXT ANNOUNCED THE RESIGNATION OF GARY GORSKI AS ADVERTIZEING MANAGER. A DISCUSSION ON THE HANDLING OF ADVERTISING FOLLOWED. IT WAS DECIDED THAT JACK RUTT WOULD BILL REGULAR ADVERTISERS, BUT THAT WITH MONEY WAS TO ACCOMPANY THE ADS OF ONE-TIME OR IRREGULAR ADVITISERS.

JOHN DEAN PROPOSED AND IT WAS ACCEPTED THAT WE TAKE WRITTEN QUESTIONS IN THE Q&A PERIOD WITH BOTH THE QUESTION AND ANSWER PUT IN THE NEWSLETTER FOR ALL TO BENIFIT.

JACK RUTT FOLLOWED WITH A REPORT ON THE STATE OF THE TREASURY. SAM CORY NEXT ASKED FOR AND RECEIVED PERMISSION TO PURCHASE MORE DISKS FOR THE LIBRARY. HE FURTHER SHOWED A WICO ERGO STICK DONATED BY WICO IN RETURN FOR A REVIEW PRINTED IN OUR NEWSLETTER. IT WAS DECIDED TO USE IT AT THE AUG. MEETING, RAFFEL IT OFF WITH THE WINNER TO WRITE A REVIEW FOR THE OCT. NEWSLETTER. SAM PROPOSED AN 8 AND 16 BIT HELP SESSION TO RUN BETWEEN 9:00-9:30 PROVIDED WE CAN GET SOMEONE TO HELP RUN SESSION.

GARY GORSKI DISCUSSED THE FREE SIGN-UP OFFER BY GENIE. HE FURTHER DISCUSSED THE PLANS OF MATT KIRK TO ATTEND THE SEPT. MEETING. DOUG VOLUNTEERED HIS HELP WITH THE 8 BIT SIDE OF THE SYSOP DUTIES TO AID GARY.

LINDA DISCUSSED PLANS FOR THE WASHINGTON ATARI SHOW IN OCT. AND SET THE DATE FOR THE NEXT EXECUTIVE MEETING FOR SEPT. 23RD SO AS NOT TO CONFLICT. THE MEETING WAS THEN ADJOURNED.

WORDPERFECT BECAUSE ...

by Donald Forbes - JACG

WORDPERFECT BECAUSE ... It is the leading business word processor with 45 per cent of the market, which is has captured since it was released in 1982. It is the sales leader: Software News in its latest issue listing the bestsellers had it at the top of the list after Lotus 1-2-3 and dBASE. There are now more than one million registered users on MS and PC DOS machines alone, not counting the Mac, Amiga, Atari, and Unix.

They captured this share of the market because they did the right thing at the outset. They went to the users and asked them what they wanted. Then they sat down to develop a word processor that had all the good features that the users wanted, and none of the bad features that the users found annoying.

What you are reading here was written on WordPerfect. I started out years ago with the Wang VS word processor, used AtariWriter for years since my first article in this newsletter in March of 1983 (Eric Jacoves goes back to January 1983), learned the Leading Edge word processor, have used MultiMate for the past year, have had a Wang OIS on my desk for the past two and a half years, and have been using WordPerfect since early this year. I never wanted to master any of them--there had to be something better just around the corner. This is it. In my opinion, WordPerfect is the one to master.

The wordprocessor is unique because it always gives you a CLEAN screen. There are no tab marks, centering marks, paragraph marks and other junk to clutter up the screen as with all the other word processors I have known. All you have is single status line at the bottom of the screen telling which document you are in (you can switch between two of them at any time), your page number, your line number, and your position on the line. That's it: a blank screen just like the blank sheet of paper in your typewriter.

If you want to see the hidden codes, then they are all available with one keypress. And you can change them and delete them as you wish by flipping from the top to the bottom of a split screen.

You get word wrap, as you do in any word processor. But you can also get hyphenation, either automatic or manual, and you can adjust the zone in which the hyphenation takes place. There is also an automatic outlining feature, with several choices for numbering the various indents.

WORDPERFECT BECAUSE ... If you want to write a book, you have all the tools at hand. Want to make an index, a table of contents, an index of tables, an index of figur-

es? Want different size margins right and left so that you can bind the book in the middle? It has them all. And if your book has formulas with superscripts and subscripts, you can do that too.

It will fit all your wordprocessing needs, whether you are an author working at home, a research assistant in a legal office, a student completing a dissertation, a secretary in a medical office or a manager in an insurance office. If you are a lawyer (or want to pose as one) it will create briefs with numbered lines as well as a table of authorities (a list of legal citations).

If you want to write newsletters, it will let you compose your text in flowing newspaper columns page by page, as well as in parallel columns.

There is a fast spelling checker that will find your errors, and let you choose alternatives. If you can't spell a word, you can enter a phonetic equivalent, and it will give you a list of possible choices. There is also an extensive thesaurus that gives you synonyms (words with the same meaning) as well an antonyms (words with the opposite meaning). One keypress allows you to select the one you want. You can even ask for the synonym of a synonym of a synonym.

You can perform complicated searches within a document or across dozens of files all at once.

WORDPERFECT BECAUSE ... it has mail merge capabilities that allow you to write form letters and merge them with a mailing list. You can sort by lines and paragraphs. You can even use the mail merge capabilities as a primitive data base, so that you may never even need a data base package.

It also has a set of simple arithmetic functions (I refuse to insult you by referring to them as Mathematical Functions) which allow you to create formulas and thereby let you do billing and invoicing by including tables and columns in your text.

You can also use the cursor to draw charts and graphs and to enclose text in boxes.

WORDPERFECT BECAUSE ... it is easy to use. It has a large and enthusiastic audience because it was designed for new users and intermediate users as well as power users. All the cursor commands work off the backspace, home, end, and page up and down keys on the keypad. The word processing commands work off the ten function keys in combination with the control, shift and alternate keys (which give a total of forty different options). The typewriter keys, therefore, are used for their original purpose--to enter data. My daughter knows the Wang word processor, but she is now using WordPerfect to do her school papers.

▶

On-line Help is available with the F3 key, and you do not have to exit from the document. The package comes with a beginner's tutorial to get you started. There are computer based training tutorial packages from independent vendors. The one I have is "Introducing WordPerfect 5" by Dialogue Systems Inc. There is also a WordPerfect User Group that you can join to share experiences.

WORDPERFECT BECAUSE ... it is written in assembler language for speed, just as Lotus is. Many popular packages are written in C to make them portable, such as dBASE and FRAMEWORK and TWIN, the Lotus look-alike. Because TWIN was written in C, there is now a TWIN spreadsheet that runs under UNIX. You will appreciate the speed when you invoke the spelling checker or the thesaurus.

It also has macro capabilities. You can even write macros that invoke other macros. You can also buy a WordPerfect Library which contains macros and other word processing aids.

You can also work on two documents at the same time; for instance, you might want to create a new version of a document from the older version. One keypress lets you switch from one to the other, and you can put them up in separate windows on the screen. You can also choose the sizes of the two screens.

It is not static. There is now a new version 5 which replaces release 4.2 and contains a number of new features, especially graphics. In Dalton's bookstore I saw at least a couple of new paperback books devoted to Release 5. When my daughter has her new job at the local bookstore I will be able to get them at one third off.

WORDPERFECT BECAUSE ... it allows you to interface with all the other software that you have in the office. I wrote a small tutorial on a menu generator in MultiMate, then printed it on the laser printer, and then converted it into an ASCII document (which can be read or printed from DOS). I then copied it to a diskette and took it home and read it in as a document in WordPerfect, where I can now edit and print it as I wish. In other words, you can interchange data with spreadsheets such as Lotus and Quattro, or data management packages such as dBASE, or other word processors.

You can also import spreadsheets from Lotus for your reports, or from your data base package.

WORDPERFECT BECAUSE ... of its security features, including automatic and timed backup. You can save your text when you finish your document, and at any time in between. You can also set it to save your document automatically at any chosen time interval (say, fifteen minutes) if you are liable to power interrupts. You can also encrypt your files so that no one else can read them (but if you forget the password, even WordPerfect's technical support department will not be able to retrieve them for you).

WORDPERFECT BECAUSE ... if you are still stuck on WordStar then now is the time to switch. This goes for my friend Henry Finney (thank you for your vote for my article on a Panorama of Pure Mathematics) as well as our President Emeritus Art Leyenberger who still uses WordStar to write for Analog as well as the new year-end magazine on laptops. You no longer have to hit Ctrl-B to reformat a paragraph. You can work on two documents at once. You can cut and paste between two files. Your footnotes are renumbered automatically. You always see your boldfacing and underlining right on the screen. You can print a stack of documents and edit while they print. You also get true proportional spacing. WordStar is stuck in world of CP/M and IBM PC-compatibility; now is the time to expand. Write WordPerfect for a copy of their 157-page 1987 book "A WordStar Survivor's Guide to Word-Perfect" by W.S. Farewell and W.P. Forever. Or you may borrow my copy if you promise to return it.

WORDPERFECT BECAUSE ... today, September 10, at our meeting we are fortunate to have Matthew Kirk, the sales representative for NY and NJ, on the schedule to talk about the program for the ST (brought out in late 1987 and which is file and keyboard compatible with the IBM version) and to answer questions. Now is the time to think up some tough questions (Does WordPerfect take full advantage of the ST graphics capabilities? How good is the technical support for the ST version? Are all the bugs out? Can we switch documents from one version to another? How good is the documentation?) and collect all your arguments as to why you are NOT ready for WordPerfect at this time.

FREE SIGN UP FOR GENIE

Gary Gorski - JACG Sales Manager

Special for ATARI users. Are you interested in saving $29.95? If you are, read on! With your Atari computer, modem, and telephone you're-set to do just that. For a limited time you can sign up for GEnie, General Electric Network for Information Exchange. For keyboard sign-up, just follow these three easy steps, (make sure to have your VISA, MASTERCARD, or personal checking account handy to set up your personal GEnie account).

1. Set your modem for half duplex, (local echo), at 300 or 1200 baud. 2. Dial (toll free), 1-800-638-8369. Upon connection, enter HHH. 3. At the U#=prompt enter XJM11887,ATARI and press return.

The following is what you will see!

CONNECT 1200
U#=XJM11887,ATARI<RETURN>   WLCOME TO GEnie (tm)

The General Electric Network for Information Exchange

Welcome to GEnie, the information service for Micro-computer enthusiast and professionals...like you'

GEnie international availability

   1) United States
2) Canada

Enter # of country where you are located ?
Answer 1 or 2

Genie features include:

World News, Weather, Sports, Business & Financial Information, Travel, Airline & Tour Information, Electronic Encyclopedias, GE Mail (TM) electronic mail, RoundTable (TM) Bulletin Boards, Real-Time Conferencing RoundTable (TM), Software Libraries, LiveWire (TM) CB Simulator, PC Newsletters and Information, Multi-player Games, 2400 baud service.

GENIE SERVICE AVAILABILITY: GEnie Services are available 24 hours every day. Occasional outages are scheduled.   WAIVED SUBSCRIPTION FEE: The $29.95 signup fee is WAIVED. This waived offer does not include a GEnie User's Manual. One may be ordered for $14.95 which includes shipping and handling.

USAGE RATES: Non-prime time: $ 5.00 per hour Prime time: $35.00 per hour Certain value added products are charged at a higher rate than basic services.

Prime time is in effect from 8 AM to 6 PM local time on WEEKDAYS only. Non- prime hours are all other times and include GEnie weekday holidays.   Please enter your name, Example: SMITH,JOHN J.

Enter your residence address(2 lines), Example:
401 N. Washington St. Apt. 402 First line ?

Second line ?

Enter your city, state, and zip code. Example:
Rockville, MD, 20850 or Rockville, MD, 20850-1234

Do you wish to have same mail address as your home address (Y/N) ?

Enter your home telephone number Example:
301-555-2121 ?

Enter your daytime telephone number Example:
301-555-2121 ?

Please enter your mothers maiden name. GEnie uses it as an added security precaution during telephone contacts, to make sure we are speaking to the correct person. Example:
Jones ?

Your name and address info is as follows:
1) Last Name:
2) First Name:
3) Home Address:
4) City,State,Zip:
5) Mailing Address:
6) City,State,Zip:
7) Home Phone:
9) Daytime Phone:
9) Maiden Name:

PLEASE BE SURE YOUR NAME IS CORRECT.
Enter the number of the item you wish to change, 11 to continue ?11
Phone numbers for area Code 201 are:

No	Phone no.	Speed	Sta	City --- -------- -------- ---
1	247-0066	2400	T	New Brunswick
2	249-4187	1200		New Brunswick
3	285-1715	1200		Morristown
4	285-1870	300		Morristown
5	381-5044	300/1200		Rahway 6 442-1449 300/1200 S Perth Amboy
7	487-1553	2400	T	Hackensack
8	489-0220	300		Hackensack
9	489-0570	1200		Hackensack 10 526-5219 300/1200 S Somerville (Raritan)
11	539-3394	2400	T	Morristown
12	654-0115	300/1200		Westfield
13	666-1661	300/1200	S	Westwood (Hillsdale)
14	741-8490	300/1200		Red Bank
15	766-5282	300/1200	S	Bernardsville (Bskng Rdg)
16	846-8560	300		New Brunswick
17	885-1554	300/1200	S	Bound Brook
18	997-7735	300/1200		Kearney

Status "S" indicates a $2.00 surcharge Status "T" indicates a $7.50 surcharge

Choose an access number ?

Remember, you are not limited to your selected number. A listing of available access numbers is accessible through your GEnie account. <RETURN>?

You must choose a method of payment. The following are your choices:

   1) Mastercard
2) Visa
3) Discover
4) American Express
5) CHECKFREEchecking account payment

Clients choosing CHECKFREE will be blocked from accessing GEnie until the contract to be sent is signed and returned, along with a voided check, to GEnie administration.

Enter the number of your choice ?

If you have any questions about GEnie, please contact GEnie Customer Assistance at 800-638-9636. (VOICE) -- If you would like to obtain one of GEnie's flyers, or just want to talk. please feel free to see me in the lobby, on the JACG BBS, or give me a call !

Programming the ST
with
Personal Pascal
Paul Machiaverna - JACG

OSS/ICD's Personal Pascal (PP) has been with ST users for some time now and has become one of the standard languages used to write ST software. You have probably seen programs which have been written in PP, so you know that there is a lot that can be done with this very good programming language. You can write desk accessories, GEM applications, TOS and Tos Takes Parameters programs with a lot of help from the wealth of subroutines and functions available within the included libraries. This is the beginning of a series of articles to explain the basics and the advanced programs which can be written with PP. I will assume that you have read the owner's manual supplied with this language to the point where you at least know how to use the editor and compiler. This is not intended to be tutorial for learning Pascal. It is intended to show how PP can be used to write programs for the ST. So let's first begin by explaining the choices available to the ST programmer and a very simple program.

The first thing the ST programmer has to ask themselves is whether they want to write a GEM, TOS, TTP or Desk Accessory program. TOS programs are the easiest to write and Desk Accessories are the most difficult. Let's start off with a very simple TOS program shown below for you to type in with the PP editor.

Simple program to print 'Hello, World' on the screen of the ST. 8/21/88
```
Program Hello ;
Begin
Writeln( 'Hello, World.' )
End.
```

After you type it in, save it to disk and return to the PP main screen. Before you compile the program, move the mouse pointer to 'Options' on the menu bar and select compile for TOS. This tells the compiler that we are not going to use any GEM functions and to produce an executable program with the TOS file extender. Now compile your source code from the 'Files' menu bar option. Luckily, you didn't make any errors when you typed in the

source code and the program will compile and link without pausing. Correct any typos you may have made if needed. Now you are ready to run the program. Run it from the 'Run Program' option under 'Files' or go back to the desktop and double click on the program. Your TOS program will have the same name as your source code, except that the file extender will be different. The first thing that happens is the GEM environment used by the PP manager (main screen) will disappear and a blank screen with a blinking cursor will be visible. Then the words 'Hello, World.' will be shown. However, if you do run this program from the GEM Desktop your screen output will flash

by quickly and return back to the desktop. This is because there is nothing in our short program to halt itself and allow us to see the message. A way around this is to run the program from the PP manager. The manager will prompt you to press any key to continue. Try both ways to see the effects.

Let's take this simple example a step further to explore what would happen when the same program is compiled for GEM. Choose compile for GEM from the PP manager, compile the program, and run it. Your program will have the PRG file extender. Again the message flies pass you. But, there is something important to notice here. The GEM environment doesn't disappear from the screen before your message is written. Also, the message will appear in different places on the screen depending when you run it. This is because GEM expects to display text in a formatted way within a window, on a menu bar, in an alert box, or a dialog box. Therefore the machine simply places the message literally anywhere the machine allows it to because we have not explicitly told GEM how to interpret the screen message. This is why I first told you that you have to know what type of program you want to write. For now we will stick to writing TOS programs to become familiar with writing programs for the ST.

You are probably annoyed by the fact that the message is written and erased from the screen so quickly that you can bearly see it. A way to avoid this is to add a simple function to the source code. PP supplies us with a simple method of waiting for the user to hit a key before continuing execution of a program. The function is called 'Keypress' and it will return a boolean result (True or False). In other words, KeyPress will return a value of False when no key is pressed on the keyboard. It returns True when a key is pressed. To use this function in your 'Hello, World' program modify the source to match the listing shown below.

Modified version of 'Hello, World' program - 8/21/88
```
Program Hello2 ;
Var
C : Char ;
Begin
Writeln( 'Hello, World' ) ;
```

```
Repeat Until KeyPress ;
Read( C ) ;
End.
```

In the above listing you will see that the Pascal Read command is used along with the KeyPress function. The reason for this is that the Read is needed to flush the keyboard buffer and reset the KeyPress flag. This also forces the user to press the Return key to continue pass the Read command. So, if you use this method to wait for a user to press a key in your programs it is a good idea to display a message like 'Hit Return to Continue...' on the screen. There are better ways of waiting for user response, but I will discuss them in future articles of this series.

That should be enough for you to experiment with for now. Try writing other programs which display longer messages on the screen. Be sure to understand the differences in the way the ST handles TOS and GEM programs by compiling your PP source codes under both compile for GEM and compile for TOS options. Next month I'll show you how to program some simple GEM applications and discuss a list of things to consider when writing them. See you then!

CAD Facts

Michael D. Hochman -JACG

Computer Aided Design or Computer Aided Drafting is an application that has wandered from its mainframe origins to reside in the realm of the personal computer. What this means to us is that an expensive application (usually costing in the tens of thousands of dollars) can be run on an inexpensive PC. Although the PC version isn't always as extensive as its mainframe predecessor, the result is a very functionable workstation. In the case of the Atari ST line of machines, low-cost CAD software combined with these low-cost high quality computers makes for the most inexpensive CAD workstation in the world. Yes, I said in the WORLD.

But what is this animal CAD, and what is the nature of this beast? Briefly, it is a computer application which enables the learned user to create a full size object (machine part, house, or anything that has to be drawn before it is constructed) within the brains of your favorite desktop playmate (my wife refers to my ST as "his girlfriend"). The idea is that once the object has been drawn, it can be annotated and dimensioned, and then plotted (hardcopy made on a graphics capable plotter or printer) to scale (a reduced size reproduction of your drawing that is in proportion to the actual full size object) and then handed over to someone who will follow the annotations and dimensions and build your creation. Does this sound like the ancient art of drafting? This is exactly what it is, except the traditional tools of the architect or draftsperson have been replaced by a computer program and your ST.

What are the advantages of such a system? Will the machine save the drafter that much time to warrant the expense of the equipment? The answers are yes and no. If the type of drawings required are all dissimilar, that is, they share no common details, then it will probably take just as long if not longer to use the machine for the task than to do it by hand. The advantage is in the time saved in revision work, the additional input or minor changes necessary in the design process to bring your creation to perfection. In addition, a fresh plot of the design can be made from the computer file at any stage in the design process, so your work will always look clean and fresh in appearance as compared to the often dog-eared hand drawn designs. In an architectural layout of an office building, each floor of the building shares alot of common details; the location of structural members, stairs, elevator shafts, external walls. These essentials need only be drawn once, then the floorplan would be saved to disk, copied and renamed, then edited. The majority of the work is completed in this fashion, and that's when you really save time.

Another time saver is the ability to create symbol entities of highly detailed, often used graphics. You draw the graphics that represent this symbol (perhaps a bolt, resistor, or overhead view of a typical secretaries workstation) and then turn these complex details into a symbol that can be placed into your file, or any other file for that matter by simply typing in the unique name you gave the symbol when you created it (perhaps bolt, R4, or ECYSTA).

So what do you need to get started in CAD? If you own an ST, all you need is software. That will enable you to draw and save your work. Be sure that your ST has enough memory to handle the CAD package you are going to use. There are several programs available that will run on a 520 (ST or STFM), but the more full featured packages will usually require more RAM (Random Access Memory). Also, some programs are being released on double sided disks. If you run into this problem, I would certainly offer my SF314 services to any prospective CADette to make usable single sided diskettes. One more note on software. Paint programs such as DEGAS, NEOCHROME, SPECTRUM 512, and others in that genre allow text and line work. These graphics are not objects that can be altered after placement as in CAD (lets not use a hammer to tighten a screw). The difference between CAD files and those of a paint program is that the circles, lines, etc., that are created with a CAD package may be moved, deleted, copied and modified as individual objects as opposed to the colored pixels that may be placed as circles or lines, but may only be altered on a pixel by pixel basis. The CAD tool is specifically for this function and is intended as a design aid, rather than a creative paint program. Some CAD programs allow you to output a 2-D or 3-D object

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file to a pixelized picture file for use with a paint program. This would be a handy tool for architectural renderings or solid modeling.

Eventually, you will want to plot or output your drawing to paper. The most inexpensive way is with a graphics capable dot-matrix printer. Again, check to see whether the software will drive your printer or if the program includes a utility that will enable you to create your own printer driver. Many CAD packages support a wide variety of dot-matrix and laser printers. Your plot size will be limited to the width of your printer, or you may have to plot your drawing in sections (again if the software supports this feature) and then cut and paste the sections into an entire drawing. Don't be surprised to find that the CAD package you buy will drive one of the popular pen plotters that are the backbone of many so called professional CAD Workstations. These babies will plot a drawing with multicolored ink or felt tip pens on an assortment of industry standard sheet sizes, and with price tags in the thousands of dollars.

Do I need a high resolution monitor? The advantages of a high resolution monitor are you get a less distorted view of circles (which appear blocky in low-res, and elliptical or eggshaped in medium-res), and a better

representation of text and dimensions. By all means, get the monitor with the highest resolution you can afford. You will be working in more of a WYSIWYG environment if you do. Some programs require an Atari SM124 High-res monitor (no, I will not lend you mine. I'm anxious to see peple get interested in CAD, but not that anxious!!!). If your particular program allows use of the SC1224 and you can live with the blockiness then I strongly recommend you save the money you'd spend on a high-res screen and use it to buy a better plotting device. In all CAD systems, the plotted drawing is where you will obtain your highest degree of quality output. I use a multisync monitor at work that has a resolution of 1024x768 (twice the number of pixels as the Atari SM124) and carries a list price of over three thousand dollars, and my circles still look somewhat blocky.

I hope you have enjoyed this mini-view of CAD. I hope I have sparked a new interest in many of you who have read this article, and hope you will read and enjoy the other articles I intend to write on specific CAD packages (2-D as well as 3-D) and specific CAD applications (architectural, mechanical, electronics, etc.). In addition, I am planning a live demo of a top notch ST CAD program which will include a dot matrix printer and pen plotter. If you have any questions on CAD or you are a beginner with an ST, if you are confused, inquisitive, or you just want to say hello, I am usually at the meetings very early and I haven't missed one yet!

PRINTSHOP EXPLAINED

Copied from PS Utilities 1.0 documentation.
Program and documentation,
    by Rick Spencer.

PRINT SHOP DISK FORMAT EXPLAINED

This section is only for those people who are interested in understanding the structure of PS disks. A prior knowledge of Atari DOS disk structure will help in understanding this section. The information presented here is the result of my examination of PS disks.

SECTOR ALLOCATION

PS disks are single density disks made up of 720 sectors numbered 1 through 720. They are allocated as follows:

1-360	Data sectors
361	Volume table of contents
362-393	Directory sectors
394-719	Data sectors
720	Unused

DATA SECTORS

These sectors are used to store the data from your graphics, fonts, borders, etc. The first 126 bytes of each sector (bytes 0-125) are actually used to store the data. The remaining two bytes (126-127) contain the number of the next sector in the file in low/high format. If there are no more sectors in the file then both of these bytes will be zero.

VOLUME TABLE OF CONTENTS

This sector has two functions. It is first used to identify the disk and second, to keep track of which data and directory sectors are in use and which are free. The bytes in this sector are used as follows:

0-15	Identification bytes
16-19	Bit map of directory
20-31	Unused
32-121	Bit map of data sectors
122-127	Unused

The first 15 identification bytes (0-14) contain the information, 'PRINT SHOP:CLK!', the 16th byte (15) contains a number from 0 to 5. The Print Shop and Print Shop Companion check this sector every time they access the drive to find out what disk is there. The first 15 bytes tell it that the disk is a PS disk (by the way, CLK in bytes 11-13 are Corey Kosak's initials, he's the author of the Atari version of the PrintShop). The number in the 16th byte tells the program which PS disk is in the drive.

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They are as follows:

0	Print Shop side A
1	Print Shop side B
2	Graphics Library
3	Data Disk
4	Print Shop Companion side A
5	Print Shop Companion side B

Bytes 16-19 are used to identify which directory sectors are in use and which are free. The MSB of byte 16 is used to represent sector 362 and the LSB of byte 19 is used to represent sector 393. The bit is turned on if that sector is in use or is turned off if it is free, which is the opposite way of Atari DOS. Bytes 32-121 are used to identify which data sectors are in use and which are free. The MSB of byte 32 is used to represent sector 0 (which doesn't exist!) and the LSB of byte 121 is used to represent sector 719. The bit is turned on if that sector is in use or is turned off if it is free. This arrangement of course leaves no bit to represent sector 720 so this sector, as in Atari DOS, is unused.

DIRECTORY SECTORS

These sectors contain the filename, first sector and byte size of all the files on the disk. A directory entry consists of 32 bytes. The first 16 (bytes 0-15) are reserved for the filename, of which only the first 15 are actually used. The next two bytes (16-17) contain the address of the first sector of the file in low/high format. The next two bytes (18-19) seem to be some form of file type identification but I'm not absolutely sure about that. My snooping around has revealed that these bytes contain:

for	Graphics	0 & 88 or 0 & 120
	Fonts	244 & 95
	Borders	0 & 120
	Screen Magic	80 & 65
	Calendars	0 & 144

The next two bytes (20-21) contain the the size of the file in bytes in low/high format. The remaining 10 bytes (22-31) are unused. This system allows, with four directory entries per sector and with 32 directory sectors, for a total of 128 files/disk.

The above copied for JACG by Neil Van Oost Jr.

MEGA ST's ???
Almost a year,
Where are the Mega ST Computers?

Paul Machiaverna - JACG SysOp

In November of this year I will have my Mega ST4 for a year. The Mega has proven itself to be a great microcomputer to me many times over. I prefer it over any other micro that I have used. I use an IBM PC clone at work and I feel as though I am taking giant steps backward when using it compared to the ST. I use Versasoft's dBMAN for database work, Iliad's CircuitMaker for designing and testing digital electronic circuits, Michtron's Mi-Term for telecommunications, Foresight Resources' Drafix for CAD applications, OSS/ICD's Personal PASCAL for programming, and a wealth of other great programs for other computer tasks. The ST software is out there and in great numbers. The programs are easy to use and make applications a breeze to accomplish. So, why is Atari still taking it's time to put forth a campaign to prove the ST as a true business tool? Here is what I think and I hope that I speak for the majority of the ST users.

Atari is in great competition with the best sellers of the microcomputer world, Apple & IBM. IBM has been in the business of building business machines for many, many years. They have captured the trust (blind faith) of the American business. Apple has been strong in advertising their machines on national levels in television and newspapers. Atari, on the other hand, has the 'game machine' image and a lack of advertising other than pushing a new game machine. There it is, folks! Atari still make a lot of money selling video games. They choose to be conservative in their ventures and stick to spending the advertising dollars on entertainment uses of their machines. IBM & Apple have a strong hold on the business market. I do, however, believe that the ST posesses the quality and appeal of a true business tool. Atari has got to take some of their European profits and advertise the ST as such.

We all have heard the stories about high RAM chip prices, bad lead times with the overseas plant, and the lack of U.S. support from Atari to defend their position on the lack of Mega STs in this country. I have heard this too much. The other guys are still selling machines, why can't Atari? First, Atari needs to advertise the ST to the highest level possible. The U.S. consumer likes fancy advertising. Second, Atari needs to develop a support group for information and repair service for their machines. Lastly, Atari needs to work with the software and hardware developers to produce even better quality products to be used with the ST.

The Mega ST computers are the flagships of the Atari computers. The U.S. needs them, badly. Atari needs to

sell them in the U.S., badly. Since I bought mine almost a year ago I only know of a couple of people who actually where able to buy the Mega ST. This is a sad state for Atari to be in. Groups like the JACG have been supporting Atari computers for many years. But, support for a company who rejects the requests of it's loyal users is bound for failure. The failure of the Mega ST computers would be a great disappointment for me and many Atari users. I sure hope 1989 will be the year the Mega gets the advertising and support it deserves. It sure would be an asset to the computer industry.

ST Disk Library

L. Peckham - JACG

Whoops!

The problem with saying you're going to do something, is getting it done when you said you would. I'm afraid I must apologize to you ST users reading this -- as of this writing, the catalog disk is not yet finished -- and probably will not be finished by the day of the club meeting. I'm heading off on vacation shortly, and there simply won't be enough time after I return to finish the descriptions, and do the necessary duplications. So the release of JACG_LIB.000 will slide to October.

Also, as of this writing, the disks I've ordered from Current Notes have not arrived. If they arrive before the meeting, I'll put them in the library, and have the list on the wall. The updated library list should also be in the BBS library by the time you read this.

Disk of the Month
#113: Game Disk #13
Dungeons and Dragons

Anyone nervous about the number 13?

This month's disk is Games Disk #13, Library #113, and appropriately numbered it is. The game is Dungeons and Dragons, playable on either monitor. Here is Steve Newfield's report on the game:

"ST version of Dungeons and Dragons. Pick character attributes. Move around on-screen map containing 7 towns, 3 dungeons with levels, forests, swamps, deserts and mountains. Towns have inns, blacksmiths, markets, banks, and oradcles. Use potions, scrolls, and weapons to fight monsters, met between towns and in dungeons. Played with mouse and keyboard. Several menus which are easy to use. Can save and reload games, also keep best scores. Very good game, easy to play, interesting and chanllenging."

Enough said?

Next Month:
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Next month, I will try very hard to get the JACG_LIB.000 disk ready. Besides that disk and the afore-mentioned Current Notes disks, there are several other programs or disks waiting for checkout and release -- spreadsheet, digitized sound files (playable on a half-meg machine, unlike the current library entries), some more games, and clip-art. There is starting to be a fair amount of (monochrome) clip-art available for use in desktop publishing programs. Currently, I have eight double-sided disks filled with .TNY pics, three filled up in the last month. How much of that I'll release to the library, I do not know yet -- I'll keep tabs on how the

next few releases sell, and decide by that. Some of the clip-art is starting to be fairly good, as more people use the Navaronne scanners. (The $1000 + scanner that scans up to 300 dots per inch.) And, as always, I'll accept submissions, or suggestions for the library.

Disk Prices

Members:

Disk of the Month	$3.00
Regular Disk	$4.00
Non-Members	$6.00

Mail-order, add $1.00 per disk. (Send order to Bill Garmany, Jr., 13 Wellington, NJ 07039)

LEARNING TO PROGRAM IN ATARI BASIC

LESSON 4   Version 1.07

Testing, Branching and Counters

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CONTENTS:

This is Lesson 4 of Learning to program in Atari BASIC, brought to you by Jackson Beebe. Contact me at the address at the end of the lesson.

More on LOOPING:

In the last lesson we learned the powerful technique of sending program control back through previous lines of code, called LOOPING. As we said in Lesson 3, this is a prime feature that separates computers from calculators. The program can be sent back through a pile of source code lines, by using a FOR-NEXT or a simple GOTO statement, as:

```
10 DIM NAME$(15)
20 PRINT "Hello. Who are you? ";
30 INPUT NAME$

40 PRINT:PRINT:PRINT
50 PRINT "Hi there ";NAME$
60 PRINT:PRINT:PRINT
70 GOTO 20
```

TESTING:

The process that unleashes the power of looping is TESTING. This gives us the ability to make decisions each time we fall through the code, as

"should we continue?"; "should we quit?"; "is the input numerical?"; "is X > 42?"; etc. We can write lines of code that accomplish some purpose as guessing the Lotto number, and loop through multiple times. If we do that, we need to test on each pass for things like, "should we quit?"; "should output go to screen and/or printer?"; etc. This is accomplished by placing lines in the routine's code, usually at the beginning or the end, that test before or after execution.

A test at the beginning of a loop is called a Top Test, and usually tests whether to go through the loop or not. A test at the end is called a Bottom Test, done after the loop is completed. This usually tests whether to loop back or not. For example:

```
** TOP TEST **

10 X = 0
20 IF X > 10 THEN END
30 X = X + 1
40 PRINT X
50 GOTO 20

        or

10 X = 0
20 X = X + 1
30 PRINT X
40 IF X < 10 THEN 20
50 END

** BOTTOM TEST **
```

Tests for various conditions and instructions may be grouped together in one location in a program, into "piles" of IF-THEN statements. I prefer this approach, as a pile of lines makes it easy to find and debug tests. IF-THEN statements execute pretty fast, but you'll notice some slowing when using a large number.

BRANCHING:

Testing, coupled with looping, gives us the ability to make decisions as we loop. An additional ability we have in programming, is BRANCHING. Branching is simply WHERE we send control from one of our tests. If our test asked "should I quit?", and got a YES response, we would probably send control to the line that had the END statement, ending the program.

Possibilities begin to unfold like petals of a flower, as you "grok" the concept of lines of code with multiple tests for multiple things, sending control to multiple possible places, where multiple things may happen, and on and on and on. Wow! Now THAT'S programming. That's what you've been waiting for, right? Now, how do we code these tests? These CONDITIONAL TRANSFER OF CONTROL statements? They are the IF-THEN statements.

IF-THEN statement:

This statement takes the basic form of:

    line# IF (some test) THEN (some statement)

RELATIONAL Operators:

We can test for standard mathematical relationships with the RELATIONAL Operators which are:

    =   equal to

    <   less than

    >   greater than

    <=   less than or equal to

    >=   greater than or equal to

    <>   not equal to

Some examples:

    15 IF X > 89 THEN GRADE$ = "A"

    95 IF A <> B THEN C = A + B

```
135 IF NUM = 99 THEN ? "Bye":END

20 IF X > 14 THEN 1200

10 IF NAME$ = "JACKSON" THEN 135
```

Characters may be tested for alphabetical order, equal to, greater than etc.

LOGICAL Operators:

Tests may be combined, or substituted using the LOGICAL Operators:

    AND   and   OR

For example:

110 IF X >14 AND DAY$ = "M" THEN 1200

We can test for a range of numbers as:

    15 IF X > 0 AND X < 100 THEN 100

    25 IF X < 0 OR X > 100 THEN END

Line 15 above, accepts numerical input to the variable X, that is between 0 and 99.999+. Line 25 rejects input OUTSIDE the range of 0 to 100 (same thing.)

Although it looks easy, knowing when to use AND and when to use OR in your tests, will be very confusing. As you reason out the logic of multiple tests, you will make the wrong choice many, many times. Be mistrustful of your tests, until they are proven correct by trying good and bad data for input. Always check the use of OR and AND when debugging programs that don't work right. Try numbers on each side of the limits, to make absolutely sure you've got it coded right.

These really get confusing when we string tests together as:

```
70 IF (X) 0 AND X< 10 AND FLAG = 1)
THEN FLAG = 0
```

This line tests for three conditions, and if True, sets FLAG = 0. Note parenthesis used between the IF and THEN portion of the statement. These are often required to keep th[em] straight, and always allowable. Note the code following the THEN in this case, is not a GOTO, but simply an instruction. Here's a test to Quit:

```
80 etc
90 DIM KEYIN$ (1)
100 ? "QUIT (Y/N) ? ";
110 INPUT KEYIN$
120 IF KEYIN$="Y" or KEYIN$="y"
THEN ? CHR$(125):END
130 etc
```

This code dimensions a one character string variable KEYIN$ for inpu[t]. [I]t tests for both an upper and lower case y, clears the screen and ends the program if found. Testing for both upper and lower case is the best idea, as the program will work, regardless of how the user has the upper/lower case toggled. This is an example of error checking the input, a process that bulletproofs a program against incorrect input causi[ng] [a] crash. This is often a factor [tha]t separates smooth professional programs from rough hacks. We will expand on this process as we learn.
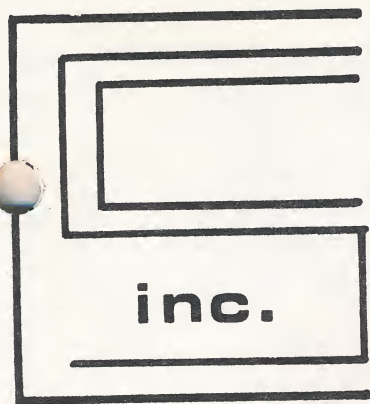
Note the quotes around alphabetic characters being tested for, and that Atari BASIC is forgiving about whether you use spaces befo[re] [a]nd after the relational operators, and variables, etc. Also note we MUST restate the variable when using AND and OR. Here's WRONG code that WON'T work:

(wrong) 10 IF A<6 AND >10 THEN END

(right) 10 IF A<6 AND A>10 THEN END

The syntax checker in the built-in BASIC editor will catch this error.

CONTINUED
NEXT
ISSUE

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JACG NEWSLETTER VOL. 8, NUM. 7
SEPTEMBER 1988

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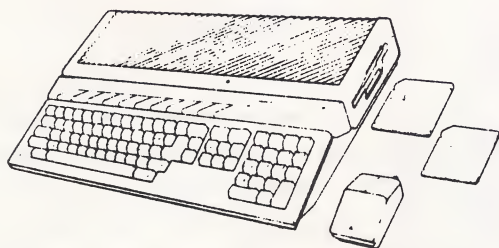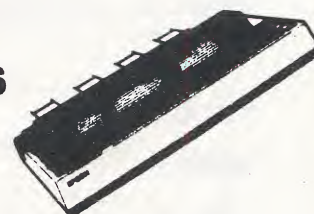
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